

OUR PARKS

TO BE OR NOT TO BE.

PAPERS READ BEFORE THE NEW YORK ACADEMY OF SCIENCES, APRIL 30, 1877
AND FEBRUARY 1, 1878.

BY EDWARD SEGUIN, M.D.

THIRD EDITION.

PRINTED FOR THE PUBLIC PARKS PROTECTIVE ASSOCIATION.

NEW YORK:
BRENTANO'S LITERARY EMPORIUM.
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OUR PARKS.

"I want our parks preserved as playgrounds and improved as garden-schools, for my grandsons Edward and John."—E. S.

To save our parks will save hundreds of children and improve thousands. To not improve these parks is to abandon them to the beast of prey which is devouring American civilization. To claim these parks for any other purposes than recreation, instruction, and hygiene, is the reverse of the progressive movement of our age.

The New York city parks have been either acquired by contract with the people's money, for the recreation of said people and the education of their children, like the Central Park; or given for the same purposes by deeds of benevolent citizens, like most of the Washington Square grounds; and tradition has consecrated the others to the same usage by a right which is respected in all civilized countries—the right of Prescription. To try to nullify these three forms of right of a hard-worked and crowded population to pure air is audacity ; and something besides.

But the recently unveiled plan of seizing one of our parks, then another, and all in succession, for the lounging and parading of militiamen, is anachronism. All nations now send their militia to the field of manœuvre every year, and excuse them from the painful duty of frightening the servant-girls and their babies in the squares—a drill sufficient to dress the bloody gendarmes of Paris, or operatic soldiers, but insufficient to initiate young men in modern warfare.

A year ago, none knew precisely what was in the air around our parks; but it smelt worse than gunpowder. In large societies, as in deep seas, there are at different depths contrary currents. When the one just described was silently running towards the

destruction of our breathing-places, another movement was beginning for their improvement.

Historically and philosophically convinced that the Institutions which are not actively improved passively deteriorate till they become the prey of the wily, and considering the relations of parks and gardens to public health and education, I thought of improving the parks by giving in them more room to hygien, and by developing their capacity for education. In this view I prepared for the New York Academy of Sciences the following paper, which was read the 30th of April, 1877.

HYGIENIC AND SCIENTIFIC USE OF PUBLIC GROUNDS.

§ I. *Historical Garden-schools.*

The parks and public grounds of a city like New York are too much considered as playthings to amuse the people with, or at best as healthful resorts for a ride or walk. If they are really the Commons they used to be, and as they are yet often called, their ideal destination must be the common weal, in which enters largely the weal of the swarming young folks.

Truly, ideals vary according to the power of accommodation of the human mind to ideas; so the human ideal has varied a good deal from time to time in regard to the appointment and destination of public grounds. But there are signs that public opinion is about to enlarge its view of them, since the legislature at Albany has under consideration a plan for the appropriation of one of our new parks for educational purposes.

It is therefore quite opportune to reassert the natural principles which have presided over the management of historic public grounds, and to trace an outline of the possible application of these principles to the management of our own parks, with due regard to the difference of aim in different societies.

The first garden-schools surrounded the temples and hospitals. When the school became independent, it carried the garden-teaching in its protestantism against the demodized (out of fashion) gods. Alexander gave his old teacher, Aristotle, one of these

garden-schools, the Nymphaeum, full of rare plants and animals, where he could both study and teach.

Tired of warring, his successors, Eumenes, Attalus, Ptolemaeus Soter, transferred their rivalry from the battle-field to their garden-schools, where the fruits of Asia were acclimatized, and where vegetable and animal anatomy and physiology attained, at once, their antique excellence.

Under Theophrastus, Zopyrus, Erasistratus, Nicander, the school-gardens of Athens, Pergamos, Alexandria, attracted thousands of students of nature. Kings felt honored by being their disciples, and toxicology became almost a royal corner in science. In it Mithridates acquired a fame by his experiments on conium, opium, hyoscyamus, and their antidotes, and Cleopatra by hers on animal poisons, under the tutorship of Cleopantus.

Later and westward, Theodoric in Lombardy, and Charlemagne in his whole empire, took personal pains to organize garden-schools among the other barriers they meant to oppose to the incoming long hibernation of the human mind. But all in vain. The subsequent awakening took place in the model-gardens planned and grown by Alfonso d'Est and Como di Medici, where was prepared a new birth of mankind, forcibly called Renaissance. Next, Henry de Navarre laid out the Jardins de Montpellier, which became the hot-bed of an illustrious line of naturalists and physicians. Soon Buffon, Daubenton, Cuvier, de Jussieu, Lamarck (the intellectual father of Charles Darwin, by the by), worked with their brains and hands to the creation and successive reorganizations of the Jardin des Plantes. And to close, without completing this commanding enumeration of the garden-schools, and of their creators, the last French Empire almost counterbalanced its turpitutes by the creation of the Jardins d'Acclimatation of Paris, Nice, and Algiers.

These incomplete reminiscences are intended to gain your approval, and to win your support, for the application to our public grounds and parks of plans akin to—but not like—those whose realization has made famous the garden-schools of Pisa, Florence, Venice, Padua, Chelsea, Oxford, Edinburgh, Breslau, Leyden, Brussels, Geneva, the Luxembourg, Kew, and Sydenham.

To be brief, I will restrict my suggestions concerning this

vast subject to two somewhat correlated points—the use of public grounds for the acclimatization of foreign trees and plants beneficial to public hygiene, and for the better instruction of youth in *Rebus Naturæ*—a more comprehensive expression, I think, than our *Natural History*.

But a previous question: Who can create our garden-schools . . . ? Architects like Vitruvius or Lenôtre may build them, naturalists like de Candole alone can plant them. But even naturalists must be charged to allow no room for bricks, as little as possible for gravel, and as much as possible for vegetation. For, if it is a sin to hasten the barrenness of the earth, which will eventually liken it to a dead moon, how greater is the offence of purposely extending the parchedness to the very grounds consecrated to the perpetuity of this world's life by vegetation?

Second only to this duty of keeping the earth green, so that it will not lose its moist atmosphere and shall not perish by our fault, come the more immediate and lesser objects I have mentioned:

§ II. *Cultivation of Febrifugal Trees.*

We advocate the planting on all available grounds—mainly on those which belong to the commonwealth—of trees which will improve the general health of the surrounding population, and particularly of those trees which can neutralize the ferments of our prevalent diseases.

In this respect nobody ignores what the city of New York suffers from zymotic and malarious poisoning in its low wards, kept dilapidated, and in its upper ones, left marshy, in order to exact bleeding rents for the habitable houses in the middle of the city.

In this strait, few among us are aroused to the necessity and possibility of successfully opposing the healthy balsams of vegetation to these deleterious emanations and machinations. Yet it is no more news that the Eucalyptus globulus of Australia has been found to possess, by its simple presence in a region, the most marked febrifugal power.

Does this tree owe its property, to make lands salubrious which would otherwise remain malarious, to its capacity of absorbing

enormous quantities of marshy water and noxious vapors; or to the camphoraceous odor it emits; or (as I think) to the capacity of the resinous down for catching the fever-sporules after the manner of the insect-eating plants, and not unlike other febrifuges, the cedar, the willow, the hemp, the sun-flower, all characterized by a sticky down or resin.

Such are the main empirical facts to which is due the cultivation of the eucalyptus in Europe, Northern Africa, some malarial districts of British India; in our hemisphere, in California and the Southern States. Even in the Northern States, in Michigan, for instance, legislative provisions are prepared to grow it by the scientific process of acclimatization. New York, no less interested in the suppression of the fever-poison, will not remain contented with listening to the results of others' experience, of which a few:

Dr. Benjamin M. Cromwell, in a report to the State Board of Health of Georgia, says of several of these trees now growing in Albany, Ga.: "At night, when the air is calm, the eucalyptus emits the characteristic odor so much commented upon by those who have described it, and to which it is thought to owe its antiseptic properties. So decided is this odor in passing in the vicinity of these little trees, that the writer can well understand how a forest of them could impregnate the air for miles with their pleasant odor, and that the stories told by travellers concerning its febrifugal properties are within the bounds of a reasonable probability."

The *London Medical Times* gives some remarkable instances of the power of the eucalypti to improve the health of miasmatic localities:

"At Paddock, twenty miles from Algiers, a farm situated on the banks of the Hamize was noted for its extremely pestilential air. In the spring of 1867, about 13,000 eucalypti were planted there. In July of the same year, the time when the fever season was to set in, not a single case occurred; yet the trees were not more than nine feet high. Since then complete immunity from fever has been maintained."

In a report to the French Academy of Sciences, Mr. Gimbert says: "In the neighborhood of Constantine, the farm of

Ben. Machidlyn was in bad repute ; it was covered with marshes both in winter and summer ; in five years the whole ground was dried up by 14,000 of these trees, and farmers and children enjoy excellent health."

I could multiply the quotations, but these must suffice to show the utility of planting the eucalyptus in our city, where the fever, far from receding, extends its ravages.

But to plant is one thing, and to ripen is another, as shown in the report of the Secretary of the Board of Health of the State of Michigan, Dr. H. B. Baker, which report shows the eucalyptus growing at once in California and Georgia, puny when set without previous nursing in Northern Italy, and thriving in France after undergoing the process of acclimatization.

This makes our way clear ; we must first plant the eucalyptus in our parks as in a nursery of acclimatization, in order to be able to transplant it later where it will do the most good.

But, supposing that the eucalyptus could not develop its virtues in our climate ; let us foster by its side the home trees whose febrifugal properties are known, but have not yet been scientifically tested, nor developed by cultivation, namely, the *Populus balsamifera* (the so-called Balsam of Gilead), several other American poplars, willows, cedars, pines, terebinths like the *Abies balsamea*, various *juglans*, like the walnut-trees, etc. Besides their hygienic properties, these trees need no expensive acclimatization, offer the largest range of colors and forms for landscape gardening, and may replace with advantage the hackneyed trees and shrubs which seem to be chosen to adorn our squares because they have neither blossom, color, balsam, scent, or fruit.

§ III. Organization of our Garden-schools.

The second use to be made of our public grounds would be to set apart portions of their land and water, as so many pages, to illustrate Natural History to our 200,000 pupils of all ages and grades. Two correlated facts render imminent the adoption of this plan : 1st, the insufficiency and unhealthiness of the city school-buildings, and 2d, the unnaturalness of the matters taught.

This double-headed criticism does not mean that the enemies of our public schools have better accommodations and superior methods of teaching, but that the best school of the present is yet the school of the past, inadequate in size and grasp to the wants of the nearest future.

But, cutting short this branching of our question where it invites the more to a philosophical excursion, let us adhere closely to our second proposition, which consists in demanding that parts of the public grounds of this city be reserved for the natural expansion of our system of popular education.

We should propose to proceed in this work slowly—as it behooves an undertaking which it will take long to perfect—yet to begin at once, upon a unity of plan whose immense details can be indicated, but not summarized here.

In this plan, 1st, each of our small squares would be adorned with special kinds of plants, succeeding each other as the season advances; and all these squares, would present, in their *ensemble*, not far from the schools, a tolerably complete cycle of classified floral botany. The Washington Square is particularly fitted, by its size and proximity to thirty schools and many factories, for that kind of natural and hygienic teaching.

2d. Every one of our parks ought to contribute large tracts of land and water for the study of (*a*) the comparative vegetation of the north, south, and west of this country; (*b*) the comparison, by strongly marked specimens, of the vegetables of the different parts of the world; (*c*) the juxtaposition of the trees, plants, and vines which furnish food, drink, and raiment to man; (*d*) the classification on the grounds of vegetable medicines and poisons, according to their properties; (*e*) according to their origin, and to the circumstances of their discovery or importation; (*f*) the growing of flowers, plants, and trees, in view of their picturesque apposition in field or house decoration; (*g*) and to almost constantly supply model leaves, blossoms, tendrils, twigs to the young aspirants towards the industrial arts who are opening a new era of prosperity for this country.

3d. For the organization of these open-air class-rooms, it would become necessary to enter into special arrangements with the city and suburban railroads to obtain a nominal fare for the transfer

of the students to and from the parks during the non-business hours of the day. And more, to restore in our schools the Greek gymnasiarach, or Roman archiâtre, whose functions, new in one sense, old in others, would be better expressed by the name of Keeper of the vital forces, or chief of the movement of the training, in contradistinction to the present superintendent of the studies, who is physiologically the chief keeper of immobility in the school.

This idea—developed in my report, to the U. S. Secretary of State, the Hon. Hamilton Fish, on Education at the Vienna Universal Exhibition of 1873—is here but apparently digressive, since it introduces us deeper into our subject, which is to find the means of restituting the city grounds to their historic and scientific destination, and to keep our children in affectionate intercourse with nature.

But, to act the beneficent part of nature in education, our parks must be made (*a*) the books to which every season brings new leaves full of ideas and illustrations; (*b*). the text and commentary of the development and solidarity of all the vital forces; (*c*) and the exponent of the concordance of the special laws of fecundation, gemination, crystallization, vegetable dynamics and mechanics, electricity, etc., with the highest generalizations of order in the universe.

One can foresee that these garden-schools will be but the beginning of the enlargement of our national system of education, and that a large part of the schooling will have to be carried, from its present narrow abodes to the museums of art, from our infections brick schools to the garden-schools, and to the scientific and industrial collections, where, under myriads of shapes, ideas are imprisoned in matter, expecting to be taken from their Hades by young brains ready to bring these captives to a new and higher life.

In a word, our public gardens, becoming public schools, must be made subservient accessories to our system of national education; and the physician charged with the management of the vital functions of the wards of the State during their training will be, in reality, the Keeper of the vital and productive forces of the nation.

EXTRACT FROM THE MINUTES OF THE BOARD OF EDUCATION.

From the Committee of the New York Academy of Sciences, as follows :

The undersigned, a committee of the New York Academy of Sciences, appointed at the instance of Dr. Seguin, to suggest methods by which the public parks of New York could be made most useful to the citizens, respectfully submit the following resolutions :

Resolved, 1. That the public parks of New York, like those of every other great city, are of inestimable value to the physical and moral health of the citizens, and should be carefully guarded from every kind of encroachment and misuse.

2. That the parks of New York should not only be made attractive places of resort, but should be so arranged and planted as to be schools of taste and means of scientific instruction. To accomplish these ends they should not only be made beautiful to the eye, but so stocked with plants and animals, as to give those who visit them impressive views of the variety and the system of nature. Hence, they should contain, not merely masses of common plants, serving the purpose of so much vegetation in the landscape, but that vegetation should include as large a number as possible of plants of scientific or economic interest, and those so arranged and labelled as to educate the understanding as well as please the eye.

3. That since it is a well established truth that certain kinds of vegetation exert a powerful purifying influence upon the atmosphere, efforts should be made to introduce these sanitary agents for the purpose of neutralizing the malaria which pervades so much of the city and environs of New York ; and that to accomplish this object, we should seek to acclimatize such febrifuge trees as the *Eucalyptus*, not now hardy here, or to introduce plants of this tree taken from some higher and colder station than those from which they have heretofore come.

4. That special arrangements should be made to facilitate the free use of our parks as garden-schools by the children now too much confined in our public school buildings ; and that some competent physiological and hygienic control should be established to guard against the evils which the weaker pupils con-

stantly suffer from too great crowding, and too long confinement in the school-room.

5. That the members of the Academy of Sciences have heard with great pleasure of the inception of a movement for the establishment of a Botanical Garden in connection with the Central Park, believing that this would add much both to the attractiveness and utility of this great place of resort.

6. That copies of the foregoing resolutions be transmitted to the Mayor of the City, the Park Commissioners, the Board of Health, the Board of Education, and the Trustees of the Botanical Garden, with the assurance that the members of the Academy of Sciences will gladly co-operate in any possible way for the accomplishment of the object suggested in these resolutions.

EDWARD SEGUIN,	BENJ. N. MARTIN,
J. S. NEWBERRY,	E. R. PEASLEE,
THOMAS EGLESTON,	OLIVER P. HUBBARD.

New York, June 18, 1877.

OFFICIAL ANSWER.—EXECUTIVE DEPARTMENT.
CITY HALL, NEW YORK, July 3, 1877.

PRESIDENT CHANDLER, *Board of Health.*

PRESIDENT MARTIN, *Department of Parks.*

PRESIDENT WOOD, *Board of Education.*

GENTLEMEN :

I commend to your kind consideration the bearer, Dr. Edward Seguin. He will explain to you his admirable system of garden-schools, etc., upon which I should like your report when convenient.

Yours truly,

SMITH ELY, *Mayor.*

This favorable letter of introduction insured its bearer a good reception, but the Heads of the three great Departments seemed to be taken unaware by the question of garden-schools. They wanted more information, particularly the precedents; and as I was a delegate to the International Medical Congress of Geneva for the American Medical Association, for the Association of Physicians for Idiots, etc., I resolved to study the question

wherever I could conveniently, and came back in November last with the documents and antecedents on garden-schools embodied in the following memoir, which I read before the New York Academy of Sciences, the 4th of February, 1878.

GARDEN-SCHOOLS IN EUROPE AND AMERICA.

"The former ideas on public schools are exhausted; new social and individual wants demand new solutions of the problem of *Universal Education*, and these solutions rest with the physician and physiologist." (From *Intervention of Physicians in Education*, a paper in the Transactions of the American Medical Association, 1877, page 357.)

Ideas, like seeds, will grow, but in many ways, of which two: Not only wholesome ideas do not attain at once their full expansion, but it is hardly desirable they should. For what is an idea which comes out alone in the world . . . ? an Utopia. On the contrary, an idea supported by the surrounding minds grows steadily, and is soon a good fruit-bearer.

Of this latter kind was soon to be, in my estimation, the idea of garden-schools, with which I entertained you last year (1877). The public said at once: Oh! yes, the kindergarten. But no. The Garden-School is not a kindergarten, not even a botanical or zoölogical garden, or summer school; it is itself: an adaptation of our gardens, public grounds, museums, and collections to the enlargement and improvement of our school-system.

Nothing is so easy as to criticise our public school; criticism comes to it from friends and foes. But, setting aside the intentions of both, they agree on one point—that, once sufficient for a limited number of children, it has become inadequate to the health-and-mind wants of the present youthful population. Let us therefore substitute for that commonplace criticism an idea of a reconstructive character.

Of this character is the idea of garden-schools as you understood it at once; that of the schooling of the masses being made more active, attractive, and practical by its transference to the open air whenever it is possible.

But, clear as this idea is in the abstract for educated minds, the forms which it may and will assume are so varied, and yet so indefinite, that when your Commission presented the plan of garden-schools to the mayor of the city, his Honor wanted to consult the three Heads of the Departments of Public Health, of the Parks, and of Education. And these High Officials, in their turn, approving of the general idea of garden-schools, demanded more information about its practicability, and the particulars of what was nearest to it in Europe.

These demands classed at once our idea with those which the surrounding minds will support as soon as they are fully comprehended. To gain for it this *sine quâ non* support, I started to see the public gardens and grounds most akin to our own ideal; and I came back with more definite forms of open-air teaching, by which the school may be almost unlimitedly enlarged without erecting new buildings.

Not that I have found in my errand through a part of Europe what I wanted; but the nearer I came to the latest improvements in public gardening, the more I felt the approach of something like a garden-school; though I must confess, nobody but one who had seen a garden-school with his mind's eyes could have foreseen there its first shape.

These European gardens are mythological, fashionable, botanical, zoological, conservatories of exotics, or acclimatization grounds, often of a mixed character; almost all disposed for walking and riding, and for the varied amusements in which children, and many grown people as well, find ample scope for mirth, activity, versatility, imaging and imagining powers.

Some of these public grounds, stately in lines and subdued in tones, unfold in their rectangular walks, like the Pincio of Rome, all the known busts of antiquity—copies, to be sure, but correct enough to let the passer-by read on them the marble-proofs of the texts of Tacitus, Plutarch, Appian: that is already garden-school education.

Other parks, not unlike the Elysian Fields, are peopled with statues which now expect in vain the apparition of gods, heroes, or kings: Calypso bewitching Telemachus; Perseus saving Andromeda; and lower, Dubarry-as-Diana making Louis-Endy-

mion believe she wants to escape through the misty spray of Neptune. Such were Marly and Sceaux, such are yet the two Trianons, and parts of Versailles, Dresden, Hampton Court; and Monceaux, which, famed for lesser divinities, shades under its umbrella-like catalpa leaves happy babies and dreamy adolescents.

The popular gardens of Milan, Florence, the Tuileries, the Allées of the Luxembourg, the Buttes Chaumont, and the Bois de Boulogne, the Central, Prospect, Fairmount and Lincoln parks, and many others in London, Southampton, Edinburgh, etc., afford more comfort to the busy than instruction to the young folks; yet I am ready to admit that many images are unconsciously stored there during rambles, which turn up ideas when wanted.

The botanical gardens are not all alike. Those of Padua, Pisa, Leyden, Breslau, Montpellier, are parts of the vast foundations of the Renaissance which revived science and letters, but they stood too high above the wants of the masses to serve us as models.

A more popular institution was the Jardin des Plantes, created by Buffon, imitated in many places, which developed among plain people the taste for Natural History and its accessory arts. There, many young naturalists began, as Lamarck, their gratuitous studies; Barrie and Mène, two poor lads, made themselves great sculptors, partaking of dry-bread breakfasts with their brute models.

To the appreciation of our psycho-physiological capacity for receiving impressions, like heliotypes on the retina, *en passant*, is likely due the creation of these resorts of the multitude, where the education of, and by the senses, is incessant and forcible. To the English belongs the honor of having perfected those immense glass-palace-gardens, invented by Girardin to exhibit everything pleasant and instructive to everybody. Their Kensington and Sydenham (though in part tainted with the horrible taste of the preceding generation) have on the whole, on the present English æsthetics, an influence which can be measured by its results.

The most tangible of the results of this sight-education is (if I appreciate rightly what I have seen) the lately finished City Hall of Manchester. Its stately forms are nothing next to the imaginative variety of its ornamentations and numberless motives; and its precious materials, marbles, onyx, granite, woods, glass,

silks, are like nothing when compared to the artistic finish of their workmanship. One must see the poor interior of the pretty-faced Hotel-de-ville du Havre, built at the same time, in order to appreciate the stride made since twenty years by the English workmen, artisans, and decorative artists.

Let us not forget, however, that the immense garden-collections of England are but indirectly connected with her national teaching, and do good mainly as preparing the taste of their innumerable chance visitors.

I was about coming home worried and rather discouraged at not finding more of my looked-for precedents ; that is, finding many gardens of instruction, but none directly connected with a public education-system, when I came across two more interesting facts.

I had visited the popular school of design of Manchester (as well as those of Paris, Lyons, and Geneva), but I comprehended its influence only when I saw in London how all the English schools are connected with that part of the Kensington Institution which gives to all the teachers their complimentary and obligatory diploma for proficiency in teaching drawing, modeling, and painting, in water-color at least. This special organization, taken in conjunction with the art-and-nature shows already spoken of, explains the progress in taste of the English nation, from Milais to the thousand admirable unnamed designers on wood, potters, or modellers in clay. Here was another of the precious links I had sought, for the better enlargement of our public school and teaching. Of course, it had only a distant relation to the garden-school ; since flowers, twigs, and all vegetable models in their natural freshness, have to be brought daily into the English school, instead of the school being carried into the garden ; the process was awkward, but the result was good, and one of those looked for.

The other discovery I made was nearer to our object. It was that of a ground which had no shape yet, except its natural undulations tending southward, and resembled an idea developing itself under the touch of spades. In October last the Municipal Council of Paris had voted an appropriation to convert the park of Montsouri into a garden of instruction, to be in some way connected with the public schools of the city. I went there on a fine morning, and found the gardeners shaping with their tools

the idea which I had three months before presented to this New York Academy of Sciences in its philosophical nakedness.

However, I must add to this *de visu* testimony that I could not learn in detail what will be the relations of this beautiful garden-school to the municipal schools, colleges, or private teachings of Paris; nor what could be the similitudes between the improvements in course of execution at Montsouri and those contemplated here.

To find a coincidence in the details of execution (the mother-idea being the same) between the views of men like Charton, Littré, and Bourneville, leading members of the Municipal Council of Paris, with ours, would have been a good fortune in one sense. But Littré was sick when I went to see him, Bourneville could not be met, and Charton was absent at Versailles; so that I could learn none of the details of their garden-school plans. Therefore you are at liberty to make this mishap of mine fortunate for you and the city of New York. It leaves you the priority of the idea of garden-schools, since you endorsed it before it was considered by the Municipal Council of Paris; and it leaves you, too, the entire originality of the plans of execution, which you can now devise in complete ignorance of those of the French officials, and in accordance with the wants of the American youth.

Those of you who have so kindly listened to these explanations and descriptions can now see that I have not beaten the bushes in vain; on the contrary, that I have brought the game where you are at liberty to take or to let it escape.

To resume: I have been asked if the idea of garden-schools has precedents, and I have shown its growth in history; if there are any gardens used for teaching, and we found many; if grounds of public amusement can be adapted also to instruction, and this duality of object is the salient trait of the most famed gardens; if there are already in Europe garden-schools connected with any system of popular education, and we found only one such in process of formation.

As a result of this survey, if I am asked which of the European gardens of instruction can serve us a model, I answer: none. Aping Europe in education, as well as in other matters of

organic importance, is not desirable. The crops of women and men wanted here are neither the low and needy, nor the artificial and unproductive classes, whose juxtaposition makes the pictur-esque side and the dangerous foundation of old societies. Like the Councillors of the city of Paris, we want the garden-school—not for a few, but for all. But we deprecate copying even their Montsouri Park—if we could, because such creations must spring up from the genius of each nation, as well as from historical precedents.

Following these indications, we have found, in the course of our inquiry on the European gardens, that their philosophy runs quite parallel to their chronology; both showing gardens to have been active instruments of education, as people understood its problems at different periods. Now, turning our regards toward home, we find the same tendency to shape the gardens and the parks, and the collections of art and of natural history together, as means of general education; all that we need, therefore, is to do it, not slovenly as by fate, but upon a preconcerted plan commensurate with the destinies of the nation.

In this view let us recapitulate what we have and what we need. We have the most excellent and numerous school-buildings, though notoriously insufficient for the teaching and completely inadequate to the training. But though there are near them museums, libraries, gardens, parks, exhibitions, etc., the public schools remain isolated from these resorts of taste, activity, interest, and learning;—a fault which lies both ways.

If we make an exception to this general criticism, it is for the Museum of Natural History, whose trustees have tried early to establish the link between it and the common school. In 1869 they promised “it would soon be opened, not only as an attraction to visitors from all parts of the United States, but as a school in which our own children will acquire information;” adding: “We feel that too much stress cannot be laid upon the importance of the institution as a means of public education.” Their report of 1872 is no less explicit, when it nominally “invites the teachers and pupils of public schools, and the inmates of charitable and benevolent institutions, in order that the museum be used for educational purposes, as well as to afford recreation

to the public. (Two days are reserved for the schools.) This arrangement, by furnishing opportunities to the teachers to explain the specimens to their classes, will make the Museum an important part in the educational system of our city."

These wise provisions being made on one side, why were they not carried out by the other party? Because of the absence of a link between the school proper and the museum—because the teachers were not prepared; and I am sorry to say, will not be prepared for some time, since the pupils of the Normal School across the Central Park—who are said to qualify themselves for teaching—do not come to the Museum to learn how to teach Natural History, no more than they go to the Art Museum, or to the School of Design, to learn how to teach drawing. Yet, in Nature are found all the noble forms; by the hand these forms become the property of man; to train the hand of our vast population would be to elevate among the laborious communities the American People: there is the link.

It is painful to acknowledge that our art institutions are behind the Museum of Natural History, and far behind the Kensington School in liberality towards the children; and in provision for the art-education of their teachers: as if art was no bread to the needy as a work, as it is bread to the soul as a *jouissance*—the redeemer of sordid interests or *besoins*, the commentator and revealer of everything noble in human nature.

But why do we give to these forms of teaching a place in the garden-school? Because they have it in fact and in history, from the typical gardens of the Academy of Athens to the most modern ones in Europe. These two forms are equivalent and substitutive; the weather permitting, the teaching is given in the open air; the weather changing, the children find shelter and lessons in the museums. The principle is to not teach anything in-doors which can be learned out; nothing to be taught from books which can from nature; nothing from dead nature which can from the living.

Viewed in this light, and compared with those we have seen abroad, our Central Park presents a strange contrast. In its conception and execution the public has been treated like a prince, but the children rather niggardly; though by its consti-

tution and by-laws "The Central Park must be used for educational purposes as well as to afford recreation to the public."

To excuse this breach of such a clear and costly covenant, it may be said that a park cannot well be planned with two objects; that, if it is a pleasure-ground, it cannot be a study-ground, etc. But, in fact, many European gardens are both. Among others, Kew has seventy-five acres devoted to study, and so disposed that none of the pleasure-seekers are gloomed by their sight, nor the students disturbed by the idlers.

This sophism disposed of experimentally, nothing remains but to retrace our steps, by doing as much in our parks for children as we do for sport and fashion. Otherwise, seeing nothing but ride, riding, riders, they will consider sport as the main object of life, and waste their precious capacities where nothing is needed but a large inheritance and leather breeches.

This remark is hardly sharp enough, considering how many promising young men have ended their fast park-riding by fast running away. Moreover, the pleasure-grounds provided for children are unvaried, and the smaller ones are denied entrance to the park with their own goat-wagon—an "active" exercise rendered "passive" as a monopoly in mercenary hands—these little riders having not even a reserved avenue where they and their mamma or nurse could be safe from intrusion or danger.

But, to come to apparently more important topics—though I think the best school till the tenth year is the play-ground—and not to tarry in demonstrating what our parks would gain in variety, were they managed according to the letter and spirit of their constitution, "for pleasure and education," we formally demand that they contain garden-schools, or grounds devoted to education.

Here we will naturally meet with the assertion that the botanical garden prepared by the city will virtually be a garden-school. But the difference between these two forms of study-grounds is too great for their confusion not to be insisted upon. In the first place, a botanical garden must contain many plants, arranged according to a complete system of botany; in a garden-school a few typical specimen plants suffice, arranged after some simple classification, as de Candolle's. Besides this, everything else differs. In the garden-school some plants must be grouped

according to their affinities, so as to express their sympathetic and physiological existence; others by their climatic habits; others for their qualities or properties, domestic, nutritious, medical, toxic, etc.; others as models of lines and colors in the classes of arts and industries. The converse practice of presenting this whole vegetable world bereft of all its meanings, even of its names, is not easy to characterize.

But, to continue our description of the garden-school: The zoölogy of the park would gain in scholastic interest if the number of animals was diminished and their variety increased; and most important, if their surroundings were made conformable to their natural history and habits. Also, in some quiet corner of this department, children would be immensely interested to find in full operation the appliances for artificial hatching, breeding, and fattening poultry, raising the silk-worm, etc. There are happiness and millions in the creation of the tastes of the people for such productive and peaceful occupations.

There is no more reason for the waters of a park to look dead than for its trees to look meaningless. They can be made lively with the appliances of hydraulics and with specimens of their own powers; they may represent miniatures of the great American water-falls, Niagara, Montmorency, etc.; they must be alive with shells, fishes, water-weeds, and blossoms; and show plainly the wonders and remunerations of fish culture.

Geology claims for its study the rocks and cave of the park; not only on account of their interesting formation, but for the facility they offer of representing, by insertion in sections, the mineral wealth and topography of the country.

Many other teachings of realities have their place surely marked in our future garden-school, as drawing and carving from plants and animals—all-open-air schools, which need no more buildings and will breed no contagiums. We insist only on the adoption of the principle, confident that its consequences, health and healthy knowledge, will follow.

We claim the use of a part of the Central Park for public education in virtue of its Constitution, which consecrates it equally—that is to say, in equal terms—to the pleasure of the public and to the instruction of the youth.

We claim the accession of the grounds and collections which belong to the city, or come under its control, and particularly of Washington Park and museums, to the other means of public instruction and hygiene.

We claim the scattering of the garden-teaching all over the available city-grounds, instead of its proposed concentration in a privileged enclosure. These grounds to be selected, either for their fitness, or for their proximity to schools or industries, for instance. In the remnant of park called the Battery, the fronting could be made the rugged home of madrepores, astreas, sea-anemones, sea-weeds, etc. The lands of Jones' Woods would grow the heavy American timber, and their water-front serve as aquarium and water-gynasium. The Sahara called Tompkins Square could generate oxygen if it was thickly planted with aromatics, vegetables, and flowers. The Washington Square is wanted for an avarium, rosarium, and other collections of flowers and vines, in order not only to teach the scholars, but to elevate several of our best art-industries.

This park is surrounded by a population which enfranchises us from the enormous tribute once paid to foreign skill for artificial flowers, leaves, trimmings, bird-mounting, etc. A little encouragement by fine models, and a slight education of the eye, would enable this truly respectable part of our population to soon compete with the Italian and the French in foreign markets, and to levy industrial tributes where we were once tributaries. As an illustration, three sisters of one of my friends studied the perfect roses fronting Luxembourg with such success that Batton paid for their roses six dollars each; and there is in that row four well-known rose-trees which must have repaid to the city of Paris one million francs in unequalled art-imitations.

I regret to say (but it is necessary to say it) there is not in all our parks a decent rose worth copying, nor a pink, a hyacinth, a meadow-saffron peeping with naturalness through the young grass to invite the pencil of artists to grace, or the tongue of children to picturesqueness. But my heart is too full of the emptiness of idea which rules these public matters to continue its criticism; humiliation silences me. As a last advice:

What is for select children a real-school on a tray, and for infants a kindergarten on a quadrated table, we want for all the children—a comprehensive garden-school system, taking place in true gardens, complemented by museums, and complementing the public school.

In support of this demand, we have shown that the improvements in European gardening are all that way—that is, tending to make these public resorts more educational; we have seen them losing their mythological, princely, or technical features, and assuming more and more the character of popular institutions of taste, of learning, and of health-culture.

I would not stop to argue how much more necessary than in Europe is the advent of this latter class of educational institutions in our Republic, where the problem of education contains the solution of the social problem, and where all must receive, not the highest possible education, but the most physiological. And it is directly by its physiological basis and bearing that this projected enlargement of our school and school-system concerns this Academy of Sciences.

Otherwise, the plan of the garden-schools is so simple that one looks in vain for an objection to its *fiat*. But what is not so simple is the obtention of the good-will and concourse of several city authorities to its execution. The present lecture is, in fact, a memorial written to bring these authorities to a *consensus* uniform with the conclusions presented last spring to the Mayor by a committee of this Academy. His Honor and his counsellors wanted more documents, particularly in regard to European precedents; I went to seek these precedents with my own eyes, and I wrote them down as you just heard; not to convince you—since you were convinced at the first audition—but to invite you to give the same support to this matured plan of out-door education which you gave last year to its first and less precise proposition.

Just now great efforts are made to tear a few loaves from the mouths of trusty teachers, in order to erect new school-houses for the crowding-in of a few hundred more pupils. Therefore, this is no unfavorable time to show where there are better rooms and healthier accommodations for thousands more children, for the better training of their active functions, of their executive senses, and of the higher sense of the dutiful and the beautiful.

In consequence, I beg the Academy to name a committee for the presentation of this memorial to the Mayor of the City of New York, to the Head Commissioners of the Parks, of Public Health, and of Education, and to the superintendents of the public schools of New York, of Brooklyn, and of the State of New York, advising them to take this plan of garden-schools into practical consideration.

E. SEGUIN.

NEW YORK, Feb. 1, 1878.

After the reading of this memorandum, the Academy nominated a committee to report upon the action to be taken in the matter. But the wicked gets up earlier than the just. Before that committee could meet, the news came that the Mayor would listen to the proposition of taking part of Washington Square for an armory, and to the objections which could be made to this proposition, previously to sending his approval of it to the legislature.

Taken by surprise, land-owners, physicians, and citizens of all social standing, protested ; the Academy did the same in writing, and verbally one of its committee qualified the premeditated spoliation as a crime.

Fifteen minutes later, the authorities of the city had endorsed the iniquity and sent it to be made a law at Albany.

Now, let us suppose that it has become a law. Will it be less iniquitous? The destruction of St. John's Park was legally consummated. Does not its iniquity grow every year more odious as children die around it of summer complaint? Will the wresting of the Washington Play-ground be less loathsome when it is legalized? Its inception, plotting, planning *legiferation* are, and will remain, singly and collectively, a crime.

We appeal from this crime to the mothers who sent their infants there ; to the teachers, who know so well the wants of air of their pupils ; to the physicians, who have to contend against the killing oppression of our atmosphere ; to the memory of the best friend the children of the poor and middle classes ever had, and who departed at the time his benevolent influence was most needed—THEODORE ROOSEVELT.

